

**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of

Docket No: Q55432

Nobuhiko OGURA

Appln. No.: 09/373,585

Group Art Unit: 1634

Confirmation No.: 2737

Examiner: Frank Wei Min LU

Filed: August 13, 1999

For: TEST PIECE, METHOD OF AND APPARATUS FOR MANUFACTURING THE TEST  
PIECE AND METHOD OF AND SYSTEM FOR READING THE SAME

**REQUEST FOR REINSTATEMENT OF APPEAL AND  
SUBMISSION OF SUPPLEMENTAL APPEAL BRIEF**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

In response to the Office Action mailed November 30, 2006, submitted herewith please  
find a Supplemental Appeal Brief.

Applicant respectfully request that the Notice of Appeal previously filed on January 25,  
2006, the Appeal Brief previously filed on April 25, 2006, the Amended Appeal Briefs filed on  
August 11, 2006 and September 12, 2006, be reinstated.

It is believed that no fees are necessary since a fee for the filing of an Appeal Brief was  
previously paid on April 25, 2006. In the event a fee is necessary, the USPTO is directed and  
authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to  
Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A  
duplicate copy of this paper is attached.

Respectfully submitted,

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WASHINGTON OFFICE

23373

CUSTOMER NUMBER

Date: February 28, 2007

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For: TEST PIECE, METHOD OF AND APPARATUS FOR MANUFACTURING THE TEST  
PIECE AND METHOD OF AND SYSTEM FOR READING THE SAME

**SUPPLEMENTAL APPEAL BRIEF UNDER 37 C.F.R. § 41.37**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.37, and further to the Appeal Brief filed on April 25, 2006, and the Amended Appeal Briefs filed on August 11, 2006 and September 12, 2006, and in response to the Office Action dated November 30, 2006, Appellant submits the following revised Appeal Brief:

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**I. REAL PARTY IN INTEREST**

The real party in interest in this appeal is now FUJIFILM CORPORATION. However, Fuji Photo Film, Co., Ltd. of Japan, is currently identified as the assignee. The original assignment was submitted and recorded on October 28, 1999 at Reel 010344, Frame 0830.

**II. RELATED APPEALS AND INTERFERENCES**

To the knowledge and belief of Appellant, the Assignee, and the Appellant's legal representative, there are no other appeals or interferences before the Board of Appeals and Interferences that will directly affect or be affected by the Board's decision in the instant Appeal.

### III. STATUS OF CLAIMS

Claims 6, 7 and 21-33 are pending in the present application and stand finally rejected and are the claims being appealed in the present application.

Claims 1-5 and 8-20 have been canceled from the application.

In the Office Action of November 30, 2006, claims 6, 7, 21, 22, 25-29 and 31-33 have been newly rejected under 35 U.S.C. § 102(e) as being anticipated by Stimpson (U.S. Patent No. 6,037,186; hereinafter "Stimpson"). In the Advisory Action of February 24, 2006 and the Office Action of July 27, 2005, claims 6, 7, 21, 22, 25-29 and 31-33 were originally rejected under 35 U.S.C. § 102(e) as being anticipated by Stimpson as evidenced by Hayes et al. (U.S. Patent No. 4,877,745; hereinafter Hayes).

Claims 23 and 24 have been newly rejected under 35 U.S.C. § 103(a) as being unpatentable over Stimpson in view of Shuminov (U.S. Patent No. 5,808,554; hereinafter "Shuminov"). Claims 23 and 24 were originally rejected under 35 U.S.C. § 103(a) as being unpatentable over Stimpson in view of Hayes and further in view of Shuminov.

Claim 30 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Stimpson in view of Shuminov and further in view of Biedermann et al. (U.S. Patent No. 4,881,439; hereinafter Biedermann).

No other ground of rejection or objection is currently pending.

A copy of the pending claims on appeal is set forth in an attached Appendix.

**IV. STATUS OF AMENDMENTS**

Amendments to the claims were submitted in an Amendment Under 37 C.F.R. § 1.111 filed February 5, 2001 in response to the Non-final Office Action dated August 3, 2000.

Amendments to the claims were submitted in an Amendment Under 37 C.F.R. § 1.116 filed October 25, 2001 in response to the Final Office Action dated April 25, 2001. A Supplemental Remarks Under 37 C.F.R. § 1.116 was filed March 25, 2002, in response to the Final Office Action dated April 25, 2001 and the Advisory Action dated November 27, 2001. A CPA was filed in response to the Advisory Action dated April 24, 2002.

An Appeal Brief was filed on January 27, 2003 in response to the Final Office Action dated August 9, 2002. Amendments to the claims were submitted in an Amendment Under 37 C.F.R. § 1.111 filed August 29, 2003 in response to the Non-final Office Action dated May 29, 2003. Amendments to the claims were submitted in an Amendment Under 37 C.F.R. § 1.111 filed April 29, 2004 in response to the Non-final Office Action dated January 29, 2004.

Amendments to the claims were submitted in an Amendment Under 37 C.F.R. § 1.116 filed November 12, 2004 in response to the Final Office Action dated July 13, 2004. An RCE was filed on December 13, 2004 in response to the Advisory Action dated December 2, 2004.

Amendments to the claims were submitted in an Amendment Under 37 C.F.R. § 1.111 filed May 6, 2005 in response to the Non-final Office Action dated January 10, 2005. Amendments to the claims were submitted in an Amendment Under 37 C.F.R. § 1.116 filed January 25, 2006 in response to the Final Office Action dated July 27, 2005. An Advisory Action was issued on February 24, 2006. In the Advisory Action dated February 24, 2006, the Examiner states that the Amendment filed January 25, 2006, has been entered and that for

SUPPLEMENTAL APPEAL BRIEF UNDER 37 C.F.R. § 41.37      **Atty. Docket No.: Q55432**  
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purposes of Appeal, the amendments to the claims as indicated in the Amendment of January 25, 2006, will be entered.

All arguments are believed to have been previously entered and made of record.

A copy of the claims on appeal is set forth in an attached Appendix.

**V. SUMMARY OF THE CLAIMED SUBJECT MATTER**

Appellant’s invention as recited in, for example, independent claims 1 and 6 is directed to apparatuses for manufacturing a test piece for use in biological analysis of a sample organism.

In projects for decoding a sequence of bases in human genomes, a microarray technique is often used. In the microarray technique, a microarray chip comprising a membrane filter or a slide glass bearing a number of cDNA’s is used. See Appellant’s specification at page 1, line 12 to page 2, line 2. In the past, when manufacturing a microarray chip, a needle-like coating chip is dipped in one of the cDNA’s and the cDNA adhering to the chip is spotted on the substrate in a predetermined position. The coating chip is then washed and dried and dipped on another cDNA. These operations are repeated until all the cDNA’s are applied to the substrate. See page 2, line 25 to page 3, line 5.

However, often several hundreds of thousands of cDNA’s are applied to a substrate and therefore, it takes a very long time and is very expensive to manufacture a microarray chip. See page 3, lines 6-11. Therefore, the exemplary embodiments of the present invention as recited in for example, claims 1 and 6, address at least the above-identified problems of the prior art.

**Claim 6**

An apparatus (e.g. Fig. 3, element 100) for manufacturing a test piece (e.g. Fig. 1, element 11) for use in biological analysis of a sample organism comprising a strip-like substrate (e.g. Fig. 3, element 12) bearing thereon numbers of known specific binding agents (e.g. Fig. 3, cDNA 13) which are different from each other and are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate (see for example, page 15, line 24 to page 16, line 3), the apparatus comprising:



a plurality of applicators (e.g. Fig. 3, element 50 including supply section 20 having cDNA reservoirs 21 and applicator section 30 having application ports 31) arranged at predetermined interval in a first direction (e.g. Fig. 3, direction X) relative to a sheet-like substrate (e.g. Fig. 3, element 12') each of said plurality of applicators respectively operable to apply one of the plurality of known specific binding agents on the sheet-like substrate (see for example, page 17, lines 5-10),

a conveyor (e.g. Fig. 3, conveyor belt 40) which conveys the plurality of applicators or the sheet-like substrate relative to each other in a second direction (e.g. Fig. 3, direction Y) which is substantially perpendicular to the first direction while the applicators apply the plurality of known specific binding agents, thereby applying the plurality of known specific binding agents in lines which extend in the second direction and are arranged at predetermined intervals in the first direction (see for example, page 17, lines 1-5; page 17, line 18 to page 18, line 4), and

a cutting means (e.g. Fig. 3, guide rail 60 and cutter edge 61) which cuts the sheet-like substrate bearing thereon the plurality of specific binding agents in the first direction into a plurality of strips (see for example, page 17, lines 10-17; page 18, lines 5-14).

### **Claim 23**

Claim 23 recites "wherein said conveyor comprises a conveyor belt (e.g. Fig. 3, conveyor belt 40), wherein said conveyor belt continuously conveys said strip-like substrate (see for example, page 17, lines 1-5; lines 18-22)."

**Claim 24**

Claim 24 recites “wherein said cutting means comprises: a guide rail (see for example, Fig. 3, guide rail 60); and a cutting edge (see for example, Fig. 3, cutter edge 61); wherein said cutting edge moves along said guide rail. See Appellants specification at page 17, lines 10-17.

**Claim 26**

An apparatus (e.g. Fig. 3, element 100) for manufacturing a test piece (e.g. Fig. 1, element 11) for use in biological analysis of a sample organism comprising a strip-like substrate (e.g. Fig. 3, element 12) bearing thereon numbers of known specific binding agents (e.g. Fig. 3, cDNA 13) which are different from each other and are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate (see for example, page 15, line 24 to page 16, line 3), the apparatus comprising:

a plurality of applicator means (e.g. Fig. 3, element 50 including supply section 20 having cDNA reservoirs 21 and applicator section 30 having application ports 31) arranged at predetermined interval in a first direction (e.g. Fig. 3, direction X) relative to a sheet-like substrate (e.g. Fig. 3, element 12') each of said plurality of applicators respectively operable to apply one of the plurality of known specific binding agents on the sheet-like substrate (see for example, page 17, lines 5-10),

a conveyor means (e.g. Fig. 3, conveyor belt 40) which conveys the plurality of applicators or the sheet-like substrate relative to each other in a second direction (e.g. Fig. 3, direction Y) which is substantially perpendicular to the first direction while the applicators apply

the plurality of known specific binding agents, thereby applying the plurality of known specific binding agents in lines which extend in the second direction and are arranged at predetermined intervals in the first direction (see for example, page 17, lines 1-5; page 17, line 18 to page 18, line 4), and

a cutting means (e.g. Fig. 3, guide rail 60 and cutter edge 61) which cuts the sheet-like substrate bearing thereon the plurality of specific binding agents in the first direction into a plurality of strips (see for example, page 17, lines 10-17; page 18, lines 5-14).

**Claim 30**

Claim 30 recites “wherein said guide rail forms an upper body portion of said cutting means.” The claimed cutting means, which includes guide rail 60 and cutter edge 61, is disclosed in for example, Fig. 3, in which the guide rail 60 forms an upper body portion of the claimed cutting means. See for example, page 17, lines 10-17; page 18, lines 5-14.

**Claim 32**

Claim 32 recites “said cutting means cuts the sheet-like substrate in a direction perpendicular to the longitudinal direction of the strip-like substrate.” The claimed cutting means is disclosed in for example, Fig. 3, in which the cutting means includes guide rail 60 and cutter edge 61. See for example, page 17, lines 10-17; page 18, lines 5-14.

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

1. Claims 6, 7, 21, 22, 25-29 and 31-33 have been newly rejected under 35 U.S.C. § 102(e) as being anticipated by Stimpson. Claims 6, 7, 21, 22, 25-29 and 31-33 were originally rejected under 35 U.S.C. § 102(e) as being anticipated by Stimpson as evidenced by Hayes.

2. Claims 23 and 24 have been newly rejected under 35 U.S.C. § 103(a) as being unpatentable over Stimpson and further in view of Shuminov. Claims 23 and 24 were originally rejected under 35 U.S.C. § 103(a) as being unpatentable over Stimpson in view of Hayes and further in view of Shuminov.

3. Claim 30 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Stimpson in view of Shuminov and further in view of Biedermann.

## **VII. ARGUMENT**

Appellant notes that for the three grounds of rejection, the claims fall into separate groups, wherein the first group includes claims 6, 7, 21, 22, 25-29 and 31-33, the second group includes claims 23 and 24 and the third group includes claim 30. The second and third groups are separately patentable for the reasons set forth below.

### **I. Rejection Over Stimpson and Hayes is Legally Ineffective**

The rejection of claims 7, 21, 22, 25-29 and 31-33 over Stimpson in view of Hayes is deemed to be moot in view of the new rejection stated at page 3 of the Office Action of November 30, 2006. However, to the extent such a rejection is maintained, Appellant submits the following.

As an initial matter, Appellant notes that for the 35 U.S.C. § 102(e) rejection over Stimpson, the Examiner is actually applying a rejection premised on 35 U.S.C. § 103. The Examiner apparently concedes that the applicator of Stimpson comprises pin applicators, to provide a dense array formation. However, the Examiner also refers generally to line formation as a method of reagent deposit. Since Stimpson contemplates formation of a dense array by pin applicators, there is no inherent disclosure of the plurality applicators disposed in a line as described by claim 26. Therefore, Stimpson as evidenced by Hayes, does not anticipate claim 26.

To the extent the rejection may be construed as a 35 U.S.C. § 103 rejection, the Examiner has provided no motivation for the combination. Should the rejection, in fact, be converted from an anticipation rejection to an obviousness rejection, this application should be returned to *ex*

*parte* prosecution to allow Appellant sufficient opportunity to respond on this separate basis of rejection.

2. **Claims 6, 7, 21, 22, 25-29 and 31-33 are patentable over Stimpson alone, as newly rejected or over Stimpson in view of Hayes, as originally rejected**

Claim 26 recites:

a plurality of **applicator means** arranged at predetermined interval in a first direction relative to a sheet-like substrate...a conveyor means which conveys the plurality of applicators or the sheet-like substrate relative to each other in a second direction which is substantially perpendicular to the first direction **while the applicators apply the plurality of known specific binding agents**, thereby applying the plurality of known specific binding agents in lines which extend in the second direction and are arranged at predetermined intervals in the first direction...and

Therefore, the claimed **applicator means** apply a reagent in lines in the longitudinal direction of the strip-like substrate. The Examiner cites Hayes (Office Action of January 10, 2005 at page 3) for teaching the claimed applicators; however, Hayes merely indicates the use of, for example, reagent jetting head. See Hayes col. 4, lines 50-60. There is no indication that the reagent jetting heads of Hayes or that the liquid application of Stimpson, are arranged and conveyed, as recited in claim 26.

On page 3 of the Office Action of November 30, 2006, the Examiner asserts that Stimpson, col. 7, lines 19-48; col. 8, third paragraph, and Fig. 2A, discloses using a reagent jet printer and lines of different DNA samples are applied to the sheet in lines or otherwise a pin applicator so that multiple dots from the pin overlap to form a line wherein the different reagent

lines on the sheet are formed as close together as possible and with minimum line width allowed by the printing method so that array density is maximized. However, Stimpson merely indicates the use of, for example, a reagent jetting printer. There is no indication that the reagent jetting printer of Stimpson includes applicators arranged and conveyed, as recited in claim 26.

Therefore, there is no teaching in Stimpson, that a plurality of applicator means are arranged at predetermined interval in a first direction relative to a sheet-like substrate and that a conveyor means conveys the plurality of applicators or the sheet-like substrate relative to each other in a second direction which is substantially perpendicular to the first direction while the applicators apply the plurality of known specific binding agents.

Claim 26 further recites “a strip-like substrate bearing thereon numbers of known specific binding agents ...arranged in a line at predetermined intervals in the **longitudinal direction** of the strip-like substrate.”

On page 6 of the Office Action of November 30, 2006, the Examiner asserts that the claims do not require that an applicator means apply a reagent in lines in the longitudinal direction of the strip-like substrate. Claim 26 specifically recites an “apparatus for manufacturing a test piece for use in biological analysis of a sample organism comprising a strip-like substrate bearing thereon numbers of known specific binding agents which are different from each other and are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate”. Therefore, contrary to the Examiner’s assertion, claim 26 specifically recites that the binding agents are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate.

The Examiner asserts that Fig. 2A of Stimpson discloses applying a reagent in lines in the longitudinal direction of the strip-like substrate. However, in Stimpson, the reagent is applied in a direction perpendicular to a longitudinal direction of the 21.5 foot sheet, as seen in Fig. 2C, and is not in lines in the longitudinal direction of the strip-like substrate.

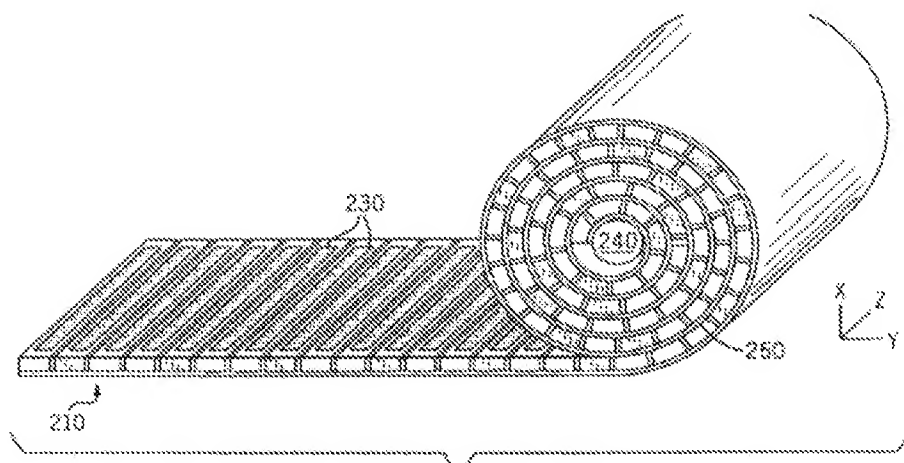


FIG. 2C

Further, as evidenced in Fig. 2A, the reagent 230 is also applied in a direction perpendicular to a longitudinal direction of the sheet 200.

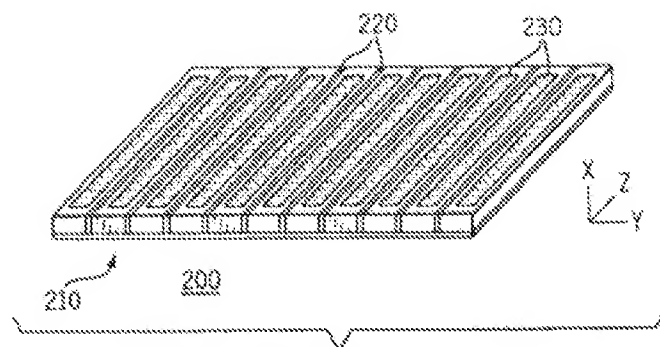


FIG. 2A



Assuming *arguendo*, applicators are disclosed in Stimpson, there is no indication that such applicators would apply a reagent in the longitudinal direction of the strip-like substrate.

Claim 26 further recites “a cutting means which cuts the **sheet-like substrate** bearing thereon the plurality of specific binding agents **in the first direction** into a plurality of strips.” However, at no point is cutting of a **sheet-like substrate** performed in Stimpson. In particular, cutting is performed in Stimpson after a sheet is rolled into a **rod shape**. See col. 5, lines 33-36; Figs. 1C, 2E, and 2D. In addition, there is no indication that the razor of Stimpson cuts a sheet-like substrate in a first direction into a plurality of strips.

In the Advisory Action of February 24, 2006, the Examiner asserts that the Appellant has not shown evidence that the razor of Stimpson cannot cut a sheet-like substrate in a first direction into a plurality of strips. However, as discussed above, the sheet of Stimpson is rolled into a rod shape. Therefore, Stimpson does not disclose cutting a sheet-like substrate into a plurality of strips.

In *A.J. Deer Co. v. U.S. Slicing Mach. Co.*, 21 F.2d 812, 813 (7<sup>th</sup> Cir. 1927), the court determined that the Defendant’s sawmill dog was non-analogous to the Plaintiff’s meat cutting device. The sawmill dog was used for cutting logs which are generally of a large dimension both in length and diameter, are hard in substance and would have to be supported differently from, for example, meat. On the other hand, the Plaintiff’s meat cutting device, was used to cut meat, which is soft and pliable and requires little holding strength, and was not capable of holding large pieces.

Therefore, Appellant submits that the cutting device of Stimpson is non-analogous to the claimed cutting means. In the present case, the razor of Stimpson is used to cut a sheet **which is rolled into a rod shape**, similar to a log shape, having a large diameter. The claimed cutting means cuts a sheet-like substrate, **which is flat** and would have to be supported differently from a rod shaped array, as disclosed in Stimpson. Consequently, it would not be obvious to one of skill in the art to apply the razor of Stimpson which is used to cut a rod shape array to cut the claimed sheet-like substrate.

Further, the Examiner asserts on page 4 of the Office Action dated July 27, 2005, that although Stimpson and Hayes do not specifically indicate that their apparatus can perform the functions of the apparatus recited in the claims, that claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. However, Appellant submits that a functional limitation must be evaluated and considered just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. MPEP 2173.05.

For example, claim 6 is directed to a cutting means and claim 26 is directed to an applying means, conveying means, and cutting means. The claimed means-plus-function limitations require the Examiner to give patentable weight to the function of the recitation. See 35 U.S.C. § 112, sixth paragraph, and MPEP § 2184. The application of a prior art reference to a means or step plus function limitation requires that the prior art perform the identical function specified in the claim. MPEP § 2182. If a prior art reference teaches the identical function specified in the claim, then the Examiner carries the initial burden of proof to show that the prior

art structure is equivalent to the structure described in the specification, which has been identified as corresponding to the claimed means. MPEP § 2182. Therefore, the functional language must be given due consideration.

In response to Appellant's argument that the functional language must be given due consideration, the Examiner then appears to assert on page 11 of the Office Action dated July 27, 2005, that it is inherent that the applicators as taught in Hayes and Stimpson function like the claimed applicator. However, as indicated above, in Stimpson, the reagent is applied in a direction perpendicular to a longitudinal direction of the 21.5 foot sheet (See Fig. 2C). Assuming *arguendo*, applicators are disclosed in Stimpson, there is no indication that such applicators would apply a reagent in the longitudinal direction of the strip-like substrate. See also Appellant's claim 33. Therefore, contrary to the Examiner's assertions, it is not inherent that the applicators of Stimpson alone or Stimpson in view of Hayes, function as claimed. Moreover, the burden is upon the Examiner, not the Appellant, to establish that the cited references teach the claimed limitations.

The Examiner further asserts that "[if] the specification defines what is meant by the limitation for the purposes of the claimed invention, the examiner should interpret the limitation as having that meaning. If no definition is provided, some judgment must be exercised in determining the scope of the limitation," citing MPEP 2182 in support. The Examiner also states that "since the specification does not define 'applicator means' and claim 26 only requires that a plurality of applicator means are arranged at predetermined interval[s] in a first direction" that Stimpson alone or the combination of Stimpson and Hayes therefore teaches the claimed

applicator means and conveyor means. Appellant directed the Examiner's attention to, for example, page 16, line 26 to page 18, line 4 of Appellant's specification, which describes the claimed applicator means and conveyor means. Consequently, upon viewing the specification and its corresponding description in the drawings, it is apparent that Stimpson alone or the combination of Stimpson and Hayes, do not teach the claimed applicator means and conveyor means.

In response to the Appellant's arguments that Stimpson and Hayes do not teach the claimed applicator means and conveyor means, the Examiner asserts on page 6 of the Advisory Action dated February 24, 2006, that the aspect of specification cited by the Appellant describes applicator ports and a conveyor belt and that the specification has no definition for applicator means and conveyor means.

However, Appellant submits that as discussed in MPEP 2181(II), the proper test for meeting the definiteness requirement is that the corresponding structure (or material or acts) of a means (or step)-plus-function limitation must be disclosed in the specification itself in a way that one skilled in the art will understand what structure (or material or acts) will perform the recited function. See *Atmel Corp. v. Information Storage Devices, Inc.*, 198 F.3d 1374, 1381, 53 USPQ2d 1225, 1230 (Fed. Cir. 1999). Appellant submits that it would be apparent to one of ordinary skill in the art that the applicator ports and conveyor belt disclosed in Appellant's specification discloses the claims applicator means and conveyor means, respectively.

For at least the above reasons, claim 26 should be deemed allowable. Claims 6 and its dependent claims should be deemed allowable for analogous reasons.

**3. Claims 23 and 24 are patentable over Stimpson in view of Shuminov**

In the Office Action of November 30, 2006, claims 23 and 24 have been newly rejected under 35 U.S.C. § 103(a) as being unpatentable over Stimpson in view of Shuminov. Claims 23 and 24 should be deemed allowable by virtue of their dependency to claim 6 for the reasons set forth above. Moreover, Shuminov does not cure the deficiencies of Stimpson alone, or Stimpson in view of Hayes.

Appellant submits that Shuminov is nonanalogous art. To rely on a reference under 35 U.S.C. § 103, it must be analogous art. A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem. *Wang Laboratories Inc. v. Toshiba Corp.*, 26 USPQ2d 1767 (Fed. Cir. 1993).

Shuminov pertains to the detection of moisture in a diaper by placing an electrode in the liner of the diaper. See Abstract. Therefore, it is unlikely that an inventor would look to a process for creating a diaper for teaching the apparatus for a strip-like substrate containing binding agents, as described in the present invention. Further, Shuminov including various compaction and assembly for a diaper would not be reasonably pertinent to the precision required in substrate assembly for DNA sequence analysis as disclosed in Stimpson. It is very unlikely that one of skill in the art would apply aspects applicable to diaper assembly to the very particular art of DNA chip construction and sequence analysis. Therefore, one of skill in the art would not combine Shuminov with Stimpson to teach elements of claims 23 and 24.

On page 8 of the Office Action of November 30, 2006, the Examiner asserts that Stimpson, a conveyor is a key element which would connect which would connect the Stimpson and Shuminov patent. Stimpson is directed to "Parallel Production of High Density Arrays" and Shuminov is directed to "Moisture Detecting Liner for a Diaper and a Process for the Manufacture Thereof." Therefore, contrary to the Examiner's assertion, a conveyor is not a key element which would connect the Stimpson and Shuminov patents.

In addition, the references are not analogous merely because both references teach a conveyor. In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be **reasonably** pertinent to the particular problem with which the inventor was concerned. MPEP 2141.01(a). Shuminov is clearly not in the same field of endeavor as the applicant's invention nor does Shuminov attempt to provide a method and system for reading a test piece and improve the sequence of specific binding agents on a test piece, as described in an exemplary embodiment of the present invention.

The preamble of claim 6 recites "An apparatus for manufacturing a test piece for use in **biological analysis** of a sample organism..." If the claim preamble, when read in the context of the entire claim, or, if the claim preamble is 'necessary to give life, meaning and vitality' to the claim, then the claim preamble should be construed as if in the balance of the claim. MPEP 2111.02. In this case, the claim preamble clearly gives life and meaning to the claim for example, the provision of deposits of specific binding agents would indicate the non-applicability of the Shuminov diaper patent.

Further, although both Stimpson and Shuminov teach a conveyor, merely because both references teach a conveyor does not mean that the references teach the conveyor as claimed. The Examiner cannot randomly pick and choose elements of the prior art to teach the claimed elements when there is clearly no motivation or suggestion for the combination. The mere presence of a purportedly similar structure in disparate art does not justify a combination when the goals and purposes of each are not related. *A. J. Deer Co. v. U.S. Slicing Mach. Co.*, 21 F.2d 812, 813 (7<sup>th</sup> Cir. 1927). The Examiner's reasoning is clearly a result of impermissible hindsight.

#### **Claim 24**

Claim 24 recites that the cutting means comprises "a guide rail; and a cutting edge; wherein said cutting edge moves along said guide rail." The art cited by the Examiner do not disclose a cutting edge and a guide rail as claimed.

There is no teaching or suggestion that the razor (cutting means as cited by the Examiner) of Shuminov includes a guide rail and a cutting edge. On page 9 of the Office Action of November 30, 2006, the Examiner asserts that Fig. 4a and col. 6, lines 5-21 of Shuminov discloses the claimed guide rail and cutting edge of a cutting means. The aspect of Shuminov cited by the Examiner discloses:

Downstream of the preliminary stage 40 is a drum 48, constituting a first roll, which feeds a tissue-type material 49 under a guide rail 50 so that, as the absorbent layer 45 passes underneath the guide rail 50, the tissue-type layer 49 is compacted on to the absorbent layer 45 thus forming a composite layer which is cut by a cutter 51 so that the tissue-type layer 49 extends along the complete

length of the absorbent layer 45 and across the narrow section of its I-shaped contour. The composite layer passes along the conveyor belt 46, downstream of which are disposed, on opposite sides of the conveyor belt 46, a pair of drums 52 and 53 constituting, respectively, second and third rolls, which feed corresponding innermost and outermost layer material 54 and 55 so as to cover opposite surfaces of the composite layer comprising the absorbent layer 45 and the tissue-type layer 49. The resulting assembly is cut by a cutter 56 so as to produce the finished diaper shown in plan in FIG. 4f and in elevation in FIG. 4g.

Assuming *arguendo*, the Examiner is citing either cutter 51 or cutter 56 for teaching a cutting edge of a cutting means and that the Examiner is citing guide rail 50 of Shuminov for teaching the claimed guide rail of a cutting means, it would be very unlikely that one of skill in the art would modify the razor or knife blade of Stimpson (see col. 12, lines 11-15) to include a guide rail and cutting edge of Shuminov. The Examiner's reasoning is clearly a result of hindsight.

Moreover, consideration should be given to the functional recitations of the cutting means of claim 24.

For at least the above reasons, Appellant submits that claims 23 and 24 should be deemed allowable.

**4. Claim 30 is patentable over Stimpson in view of Shuminov and Biedermann**

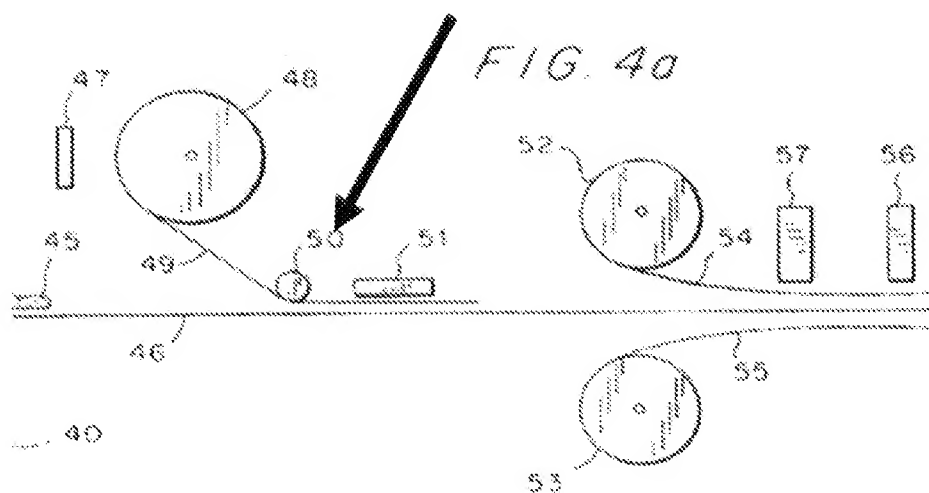
Claim 30 recites "wherein said guide rail forms an upper body portion of said cutting means." The Examiner concedes that Stimpson and Shuminov do not teach this aspect of the claim and cites Biedermann to cure the deficiency. In particular, the Examiner asserts that Biedermann teaches a guide rail located on an upper body portion of a cutting means, therefore,



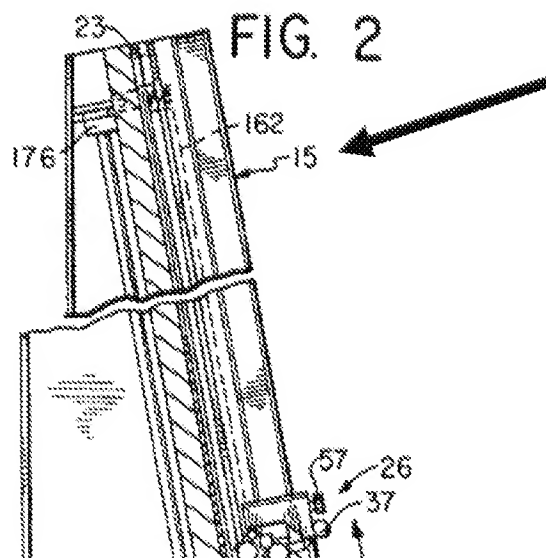
the combination of Biedermann with Stimpson, and Shuminov would be obvious so as to provide a holder for the cutting means. See Office Action of July 27, 2005 at pages 12-13.

The Examiner cited Shuminov guide rail 50 for teaching the claimed guard rail and cited the razor of Stimpson for teaching the claimed cutting means. See Office Action of July 27, 2005 at page 7. However, Stimpson col. 14, lines 51-60, describes that the spiral bundle is placed inside a metal tube whose inner diameter is slightly larger than the outer diameter of the bundle. The bundle is allowed to extend from the end of the metal tube and an array slab was cut with a razor blade using the **metal tube** as a guide to obtain a uniform straight cut. Therefore, it is unlikely that one of skill in the art would modify the cutting guide of Stimpson to include the guide rail 50 of Shuminov or the guide rail of Biedermann.

Moreover, upon viewing the illustration of guide rail 50 of Shuminov (see Fig. 4a) it is unlikely that one of skill in the art would modify the guide rail 50 of Shuminov to form an upper body portion of the cutter 51 of Shuminov or that the guide rail 50 of Shuminov would be modified to include the guide rail 15 of Biedermann (Fig. 2).



Shuminov Fig. 4a  
 (modified to point to guide rail 50)



Biedermann Fig. 2  
 (Modified to point to guide rail 15)

In particular, such a modification would result in a substantial modification of the principle of operation of Shuminov.

In the Advisory Action of February 24, 2006, the Examiner asserts that although Stimpson uses a metal tube as a guide to obtain a uniform straight cut, there is no reason why one of ordinary skill in the art could not add a guide rail as claimed to Stimpson. However, Appellant submits that the razor of Stimpson was cited for teaching the claimed cutting means. There is absolutely no teaching or suggestion in the prior art to modify the razor of Stimpson to include a guide rail as claimed. In Stimpson, a 1-2mm length of the bundle was allowed to extend from the end of a metal tube and an array slab was cut with a razor blade using the metal tube as a guide. See Stimpson col. 14, lines 53-56. The burden is upon the Examiner to show that it would be obvious to modify the razor of Stimpson with the claimed guide. Since the razor of Stimpson purportedly cuts the array in a uniform straight cut, there would be no reason for one to further add a guide rail as claimed. The Examiner's suggestion to modify the cutting device of Stimpson is clearly a result of impermissible hindsight upon viewing the Appellant's invention.

On page 11 of the Office Action of November 30, 2006, the Examiner asserts that although Stimpson uses a metal tube to obtain a uniform straight cut, that the Appellant has not indicated why one of skill in the art would not have added another guide rail to the apparatus of claim 6. However, the Examiner's assertion is irrelevant. Claim 6 does not recite another guide rail. Further, merely because another guide rail can be added to the apparatus of claim 6 does not explain why another guide rail would be added to the metal tube of Stimpson. Stimpson discloses that a spiral bundle which is placed in a metal tube is used to obtain a uniform cut.

There would be no need for another guide rail, which appears to merely be duplicative of the functions of the metal tube of Stimpson. Such duplicity is evidence that the Examiner's suggestion for the combination of Shuminov and Biedermann with Stimpson, is not obvious.

For at least the above reasons, claim 30 should be deemed allowable.

**VIII. CONCLUSION**

Unless a check is submitted herewith for the fee required under 37 C.F.R. §41.37(a) and 1.17(c), please charge said fee to Deposit Account No. 19-4880.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.


Respectfully submitted,

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Date: February 28, 2007

**CLAIMS APPENDIX**

CLAIMS 6, 7 and 21-33 ON APPEAL:

1. - 5. (canceled).

6. An apparatus for manufacturing a test piece for use in biological analysis of a sample organism comprising a strip-like substrate bearing thereon numbers of known specific binding agents which are different from each other and are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate, the apparatus comprising:

a plurality of applicators arranged at predetermined interval in a first direction relative to a sheet-like substrate each of said plurality of applicators respectively operable to apply one of the plurality of known specific binding agents on the sheet-like substrate,

a conveyor which conveys the plurality of applicators or the sheet-like substrate relative to each other in a second direction which is substantially perpendicular to the first direction while the applicators apply the plurality of known specific binding agents, thereby applying the plurality of known specific binding agents in lines which extend in the second direction and are arranged at predetermined intervals in the first direction, and

a cutting means which cuts the sheet-like substrate bearing thereon the plurality of specific binding agents in the first direction into a plurality of strips.

7. The apparatus as defined in Claim 6 in which said specific binding agents are cDNA's.

8. - 20. (canceled).

21. The apparatus of claim 6, wherein the binding agents are formed in continuous lines across the sheet-like substrate.

22. The apparatus according to claim 6, wherein each of said plurality of applicators synchronously apply the plurality of known specific binding agents on the sheet-like substrate.

23. The apparatus according to claim 6, wherein said conveyor comprises a conveyor belt, wherein said conveyor belt continuously conveys said strip-like substrate.

24. The apparatus according to claim 6, wherein said cutting means comprises:

a guide rail; and

a cutting edge;

wherein said cutting edge moves along said guide rail.

25. The apparatus according to claim 6, wherein said predetermined intervals comprise a fixed number of intervals.

26. An apparatus for manufacturing a test piece for use in biological analysis of a sample organism comprising a strip-like substrate bearing thereon numbers of known specific binding agents which are different from each other and are arranged in a line at predetermined intervals in the longitudinal direction of the strip-like substrate, the apparatus comprising:

a plurality of applicator means arranged at predetermined interval in a first direction relative to a sheet-like substrate each of said plurality of applicators respectively operable to apply one of the plurality of known specific binding agents on the sheet-like substrate,

a conveyor means which conveys the plurality of applicators or the sheet-like substrate relative to each other in a second direction which is substantially perpendicular to the first direction while the applicators apply the plurality of known specific binding agents, thereby applying the plurality of known specific binding agents in lines which extend in the second direction and are arranged at predetermined intervals in the first direction, and

a cutting means which cuts the sheet-like substrate bearing thereon the plurality of specific binding agents in the first direction into a plurality of strips.

27. An apparatus for manufacturing a test piece according to claim 7, wherein the plurality of known specific binding agents applied in a line comprise a plurality of dots.

28. An apparatus for manufacturing a test piece according to claim 7, wherein said substrate is transparent.

29. An apparatus for manufacturing a test piece according to claim 7, that apparatus comprising a flat surface accommodating the sheet-like substrate.

30. The apparatus according to claim 24, wherein said guide rail forms an upper body portion of said cutting means.

31. The apparatus according to claim 6, wherein said binding agents are arranged on the surface of the strip-like substrate in the longitudinal direction of the strip-like substrate.

32. The apparatus according to claim 6, wherein said cutting means cuts the sheet-like substrate in a direction perpendicular to the longitudinal direction of the strip-like substrate.



33. The apparatus according to claim 6, wherein the first direction is perpendicular to the longitudinal direction of the strip-like substrate.

SUPPLEMENTAL APPEAL BRIEF UNDER 37 C.F.R. § 41.37  
Appln. No.: 09/373,585

Atty. Docket No.: Q55432

**EVIDENCE APPENDIX:**

None.

**RELATED PROCEEDINGS APPENDIX**

Appellant submits that a Notice of Appeal and an Appellant's Brief on Appeal was previously filed on January 27, 2003, in response to the Final Office Action dated August 9, 2002. In response to the Appellant's Brief on Appeal, prosecution was re-opened and a Non-Final Office Action was issued on May 29, 2003.